

**1. Work requester fills out this section.**

☐ Standing Work Permit

Requester: Don Lynch	Date: 6/28/2007	Ext.: 2253	Dept/Div/Group: PO/PHENIX
Other Contact person (if different from requester): Sal Marino			Ext.: 3704
Work Control Coordinator: Don Lynch		Start Date: 2/7/2007	Est. End Date: 7/15/2007
Brief Description of Work: Preparations related to the PHENIX detector for commencement of Shutdown work			
Building: 1008	Room: IR	Equipment: Phenix Detector Magnets and Carriages, MuID Collar, Rolling Shielding Wall, IR Crane, Hydraulic system	Service Provider: PHENIX Techs

**2. WCC, Requester/Designee, Service Provider, and ES&H (as necessary) fill out this section or attach analysis**

<b>ES&amp;H ANALYSIS</b>					
<b>Radiation Concerns</b>		<input checked="" type="checkbox"/> None	<input type="checkbox"/> Activation	<input type="checkbox"/> Airborne	<input type="checkbox"/> Contamination
Radiation Generating Devices:		<input type="checkbox"/> Radiography	<input type="checkbox"/> Moisture Density Gauges	<input type="checkbox"/> Soil Density Gauges	<input type="checkbox"/> X-ray Equipment
<input type="checkbox"/> Special nuclear materials involved, notify Isotope Special Materials Group			<input type="checkbox"/> Fissionable materials involved, notify Laboratory Criticality Officer		
<b>Safety Concerns</b>		<input checked="" type="checkbox"/> None	<input type="checkbox"/> Ergonomics	<input type="checkbox"/> Transport of Haz/Rad Material	
<input type="checkbox"/> Adding/Removing Walls or Roofs	<input type="checkbox"/> Confined Space*	<input type="checkbox"/> Explosives	<input type="checkbox"/> Lead*	<input type="checkbox"/> Penetrating Fire Walls	
	<input type="checkbox"/> Corrosive	<input type="checkbox"/> Flammable	<input type="checkbox"/> Magnetic Field*	<input type="checkbox"/> Pressurized Systems	
<input type="checkbox"/> Asbestos*	<input type="checkbox"/> Cryogenic	<input type="checkbox"/> Fumes/Mist/Dust*	<input type="checkbox"/> Material Handling	<input checked="" type="checkbox"/> Rigging/XXXXI Lift	
<input type="checkbox"/> Beryllium*	<input type="checkbox"/> Electrical	<input type="checkbox"/> Heat/Cold Stress	<input type="checkbox"/> Noise*	<input type="checkbox"/> Toxic Materials*	
<input type="checkbox"/> Biohazard*	<input checked="" type="checkbox"/> Elevated Work*	<input type="checkbox"/> Hydraulic	<input type="checkbox"/> Non-ionizing Radiation*	<input type="checkbox"/> Vacuum	
<input type="checkbox"/> Chemicals*	<input type="checkbox"/> Excavation	<input type="checkbox"/> Lasers*	<input type="checkbox"/> Oxygen Deficiency*	<input type="checkbox"/> Other	
* Does this work require medical clearance or surveillance from the Occupational Medicine Clinic? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
<b>Environmental Concerns</b>		<input checked="" type="checkbox"/> None	<input type="checkbox"/> Work impacts Environmental Permit No.		
<input type="checkbox"/> Atmospheric Discharges (rad/non-rad)	<input type="checkbox"/> Land Use	<input type="checkbox"/> Soil Activation/contamination	<input type="checkbox"/> Waste-Mixed		
<input type="checkbox"/> Chemical or Rad Material Storage or Use	<input type="checkbox"/> Liquid Discharges	<input type="checkbox"/> Waste-Clean	<input type="checkbox"/> Waste-Radioactive		
<input type="checkbox"/> Cesspools (UIC)	<input type="checkbox"/> Oil/PCB Management	<input type="checkbox"/> Waste-Hazardous	<input type="checkbox"/> Waste-Regulated Medical		
<input type="checkbox"/> High water/power consumption	<input type="checkbox"/> Spill potential	<input type="checkbox"/> Waste-Industrial	<input type="checkbox"/> Underground Duct/Piping		
Waste disposition by:		<input type="checkbox"/> Other			
<b>Pollution Prevention (P2)/Waste Minimization Opportunity:</b>		<input checked="" type="checkbox"/> None <input type="checkbox"/> Yes			
<b>FACILITY CONCERNS</b>		<input checked="" type="checkbox"/> None			
<input type="checkbox"/> Access/Egress Limitations	<input type="checkbox"/> Electrical Noise	<input type="checkbox"/> Potential to Cause a False Alarm		<input type="checkbox"/> Vibrations	
	<input type="checkbox"/> Impacts Facility Use Agreement		<input type="checkbox"/> Temperature Change		<input type="checkbox"/> Other
<input type="checkbox"/> Configuration Control	<input type="checkbox"/> Maintenance Work on Ventilation Systems		<input type="checkbox"/> Utility Interruptions		
<b>WORK CONTROLS</b>					
<b>Work Practices</b>					
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Exhaust Ventilation	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Spill Containment	<input type="checkbox"/> Security (see Instruction Sheet)	
<input checked="" type="checkbox"/> Back-up Person/Watch	<input type="checkbox"/> HP Coverage	<input type="checkbox"/> Posting/Warning Signs	<input type="checkbox"/> Time Limitation	<input type="checkbox"/> Other	
<input type="checkbox"/> Barricades	<input type="checkbox"/> IH Survey	<input type="checkbox"/> Scaffolding-requires inspection	<input type="checkbox"/> Warning Alarm (i.e. "high level")		
<b>Protective Equipment</b>					
<input type="checkbox"/> None	<input type="checkbox"/> Ear Plugs	<input checked="" type="checkbox"/> Gloves	<input type="checkbox"/> Lab Coat	<input type="checkbox"/> Safety Glasses	
<input type="checkbox"/> Coveralls	<input type="checkbox"/> Ear Muffs	<input type="checkbox"/> Goggles	<input type="checkbox"/> Respirator	<input type="checkbox"/> Safety Harness	
<input type="checkbox"/> Disposable Clothing	<input type="checkbox"/> Face Shield	<input checked="" type="checkbox"/> Hard Hat	<input type="checkbox"/> Shoe Covers	<input checked="" type="checkbox"/> Safety Shoes	<input type="checkbox"/> Other
<b>Permits Required (Permits must be valid when job is scheduled.)</b>					
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Cutting/Welding	<input type="checkbox"/> Impair Fire Protection Systems			
<input type="checkbox"/> Concrete/Masonry Penetration	<input type="checkbox"/> Digging/Core Drilling	<input type="checkbox"/> Rad Work Permit-RWP No			
<input type="checkbox"/> Confined Space Entry	<input type="checkbox"/> Electrical Working Hot	<input type="checkbox"/> Other			
<b>Dosimetry/Monitoring</b>					
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Heat Stress Monitor	<input type="checkbox"/> Real Time Monitor	<input type="checkbox"/> TLD		
<input type="checkbox"/> Air Effluent	<input type="checkbox"/> Noise Survey/Dosimeter	<input type="checkbox"/> Self-reading Pencil Dosimeter	<input type="checkbox"/> Waste Characterization		
<input type="checkbox"/> Ground Water	<input type="checkbox"/> O <sub>2</sub> /Combustible Gas	<input type="checkbox"/> Self-reading Digital Dosimeter	<input type="checkbox"/> Other		
<input type="checkbox"/> Liquid Effluent	<input type="checkbox"/> Passive Vapor Monitor	<input type="checkbox"/> Sorbent Tube/Filter Pump			
<b>Training Requirements (List below specific training requirements)</b>					
PHENIX Awareness, C-A access, Crane Operator, Working at Heights					
<b>Based on analysis above, the Walkdown Team determines the risk, complexity, and coordination ratings below:</b>			<b>If using the permit when all hazard ratings are low, only the following need to sign: ( Although allowed, there is no need to use back of form)</b>		
<b>ES&amp;H Risk Level:</b>	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Moderate	<input type="checkbox"/> High	WCC: Don Lynch	Date: 2/6/2007
<b>Complexity Level:</b>	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Moderate	<input type="checkbox"/> High	Service Provider:	Date:
<b>Work Coordination:</b>	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Moderate	<input type="checkbox"/> High	Authorization to start	Date:

**3. Both work requester and service provider contribute to work plan** (use attachments for detailed plans)

**Work Plan** See attached Check List. See also PHENIX procedures PP-2.5.5.1-01 Rev A, PP-2.5.5.2-02 Rev A, PP-2.5.5.2-03 Rev. A, PP-2.5.5.2-04 Rev A, PP-2.5.5.4-25 Rev A, PP-2.5.3.14-10 Rev. A, PP-2.5.5.1-02 Rev A and PP-2.5.5.2-01 Rev A

Note: Copies of listed procedures are available on the PHENIX internal web site in the Engineering and Integration Menu under "Procedures", where the link to "Procedures For Shutdown 2007" leads to a directory from which pdf versions of the procedure can be downloaded.

Special Working Conditions Required:  
None

Operational Limits Imposed: None

Post Work Testing Required: No

Job Safety Analysis Required: ☐ Yes ☒ No

Walkdown Required: ☒ Yes ☐ No

**Reviewed by:** Primary Reviewer will determine the size of the review team and the other signatures required based on hazards and job complexity. Primary Reviewer signature means that the hazards and risks that could impact ES&H have been identified and will be controlled according to BNL requirements.

Title	Name (print)	Signature	Life #	Date
Primary Reviewer				
ES&H Professional				
Other				
Other				
Work Control Coordinator				
Service Provider				
Review Done: <input type="checkbox"/> in series		<input type="checkbox"/> team		

**4. Job site personnel fill out this section.**

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements (including any attachments).

Job Supervisor:		Contractor Supervisor:	
Workers:	Life#:	Workers :	Life#:
Workers are encouraged to provide feedback on ES&H concerns or on ideas for improved job work flow. Use feedback form or space below.			

**5. Departmental Job Supervisor, Work Control Coordinator/Designee**

Conditions are appropriate to start work: (Permit has been reviewed, work controls are in place and site is ready for job.)

Name:	Signature:	Life#:	Date:
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**6. Departmental Job Supervisor, Work Requester/Designee determines if Post Job Review is required.** ☐ Yes ☐ No

Post Job Review (Fill in names of reviewers)

Name:	Signature:	Life#:	Date:
Name:	Signature:	Life#:	Date:

**7. Worker provides feedback.**

Worker Feedback (use attached sheets as necessary)

a) WCM/WCC: Is any feedback required? ☐ Yes ☐ No

b) Workers: Are there better methods or safer ways to perform this job in the future? ☐ Yes ☐ No

**8. Closeout: Work Control Coordinator (authorizing dept.) checks quality of completed permit and ensures the work site is left in an acceptable condition. (WCC can delegate clean up of work area to work supervisor)**

Name:	Signature:	Life#:	Date:
Comments:			

## **PHENIX Start of Shutdown Checklist, 2007**

The following standard shutdown tasks are to be performed in precisely the order indicated in accordance with the indicated PHENIX Procedures (where indicated) or otherwise best practices in accordance with BNL standards and training “skill of the craft” as appropriate. These tasks are to be accomplished in accordance with the latest shutdown schedule as indicated in the current PHENIX technical support weekly planning meeting (see PHENIX Internal web site, systems engineering page for latest information).

1. Immediately after the end of Run 7, open the plug door (PP-2.5.3.14-10) raise the WC access platforms (PP-2.5.5.1-02) and open the east and west carriages (PP-2.5.5.1-01 and PP-2.5.5.2-01).
2. LOTO all PHENIX detector magnets.
3. Place all PHENIX electronics in Summer shutdown safe modes.
4. Purge all flammable gas PHENIX detectors for a minimum of 36 hours.
5. After the full minimum 36 hours of flammable gas purge has been completed, place the PHENIX safety systems in bypass mode.
6. Request removal of radiation interlocks by C-A liaison engineer.
7. Open Large rolling shield wall (PP-2.5.5.2-02)
8. Disassemble large rolling shield wall and base and store for duration of shutdown (C-A liaison engineer to coordinate with riggers).
9. Disconnect EC lift wiring and TOF blower wiring (PHENIX electrician).
10. Fold the EC scaffolding, remove the EC lift and Ladder (C-A liaison engineer to coordinate with riggers).
11. Remove the MuID Collar (PP-2.5.5.4-25)
12. Disconnect gas sniffers, water, elect., gas, fibers and RXNP blue cable from EC in preparation for move to AH.
13. Move the EC to the AH. (PP-2.5.5.1-01, PP-2.5.5.2-01 )
14. Install IR floor plates over EC openings.

15. Move tracks and 20 ton cart to IR side of EC.

16. Move C-A manlift to IR side of EC.